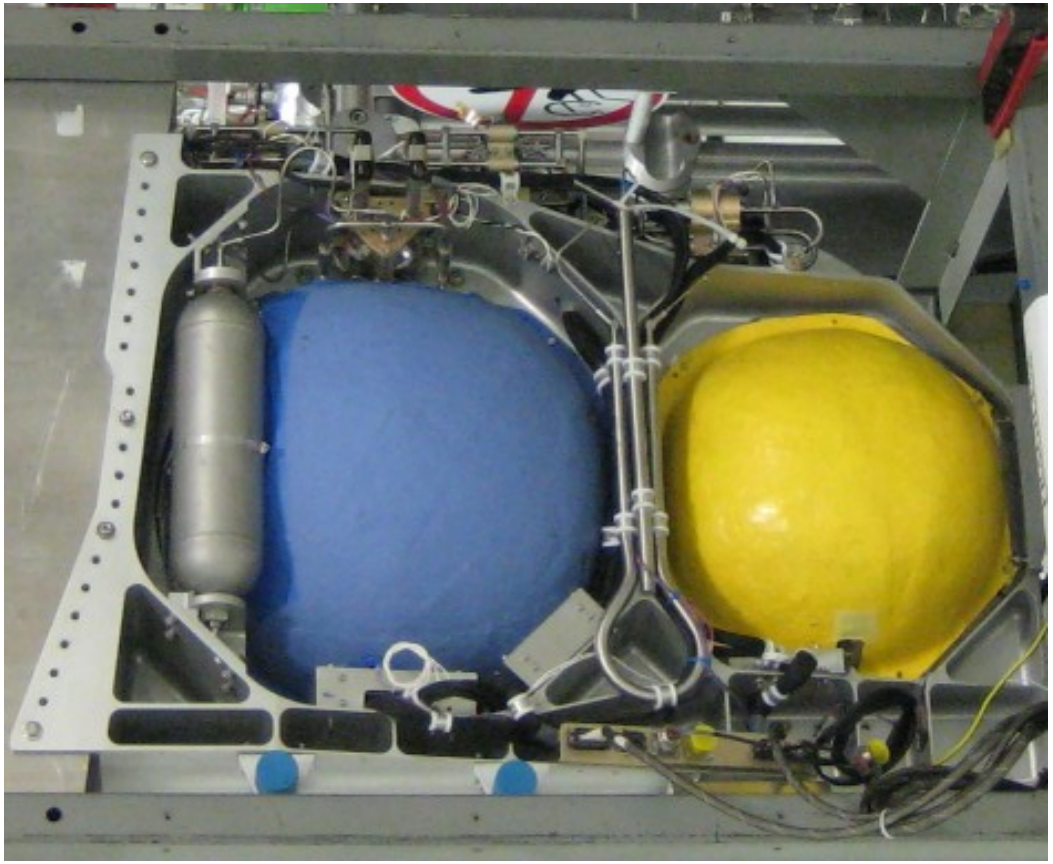
AMS TRD-GAS



Xenon/CO_2 Supply/Mixing/Circulation System for the AMS TRD

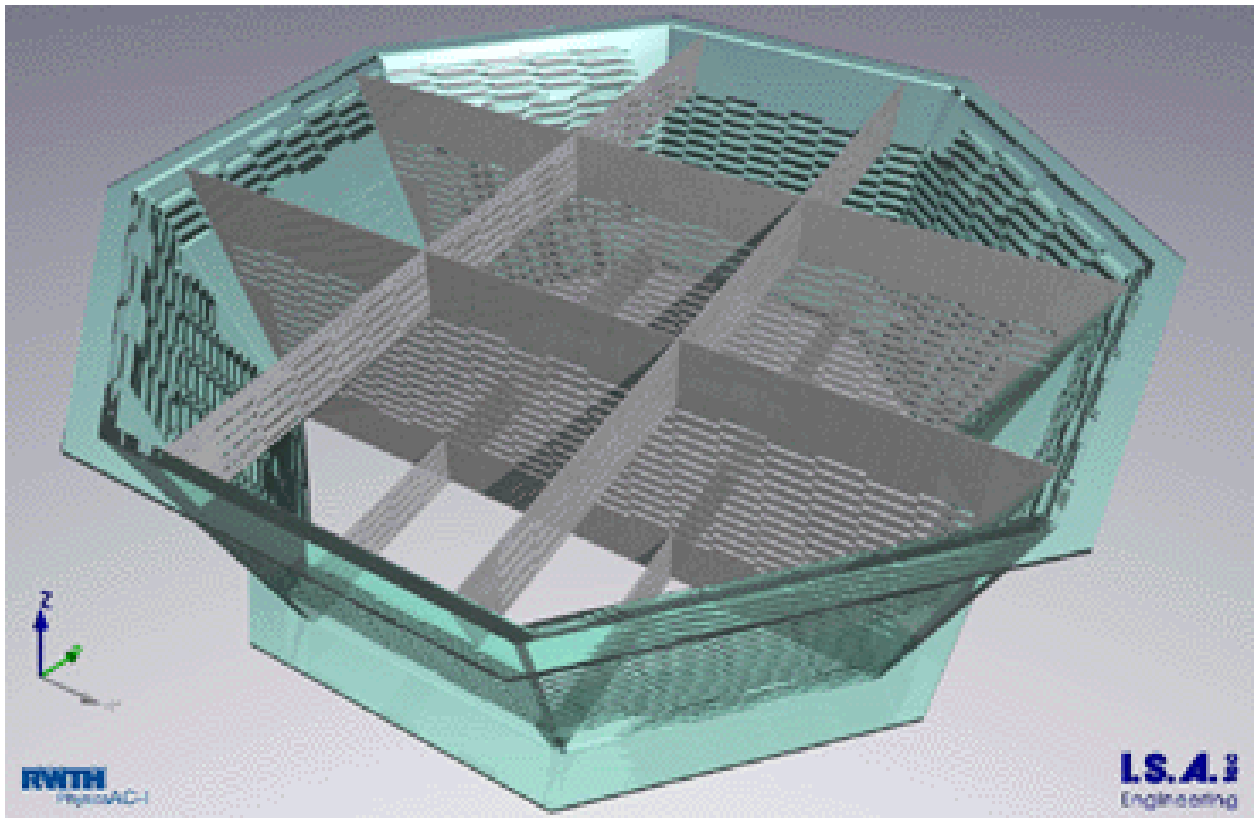
Collaboration of:	RWTH Aachen	(TRD)
	MIT LNS	(TRD-GAS System)
	Univ. Roma	(TRD-GAS Electronics)

for the collaboration: Th.Siedenburg, MIT

TRD INTERNALS

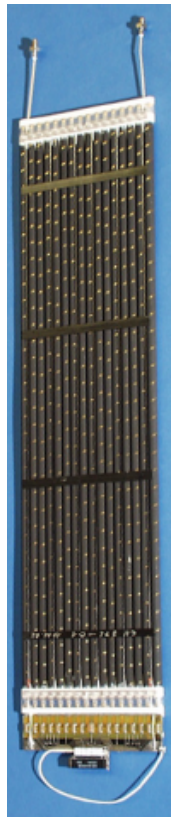
Closed Gas System for 5248 Strawtubes filled with Xe/CO2: TRD-GAS
328 Strawmodules (16 Kapton-Tubes) Gastight to the diffusion Level (230l: 2l CO_2/d, 0.5l Xe/d)

6 longitudinal stiffeners Strips across every 10 cm



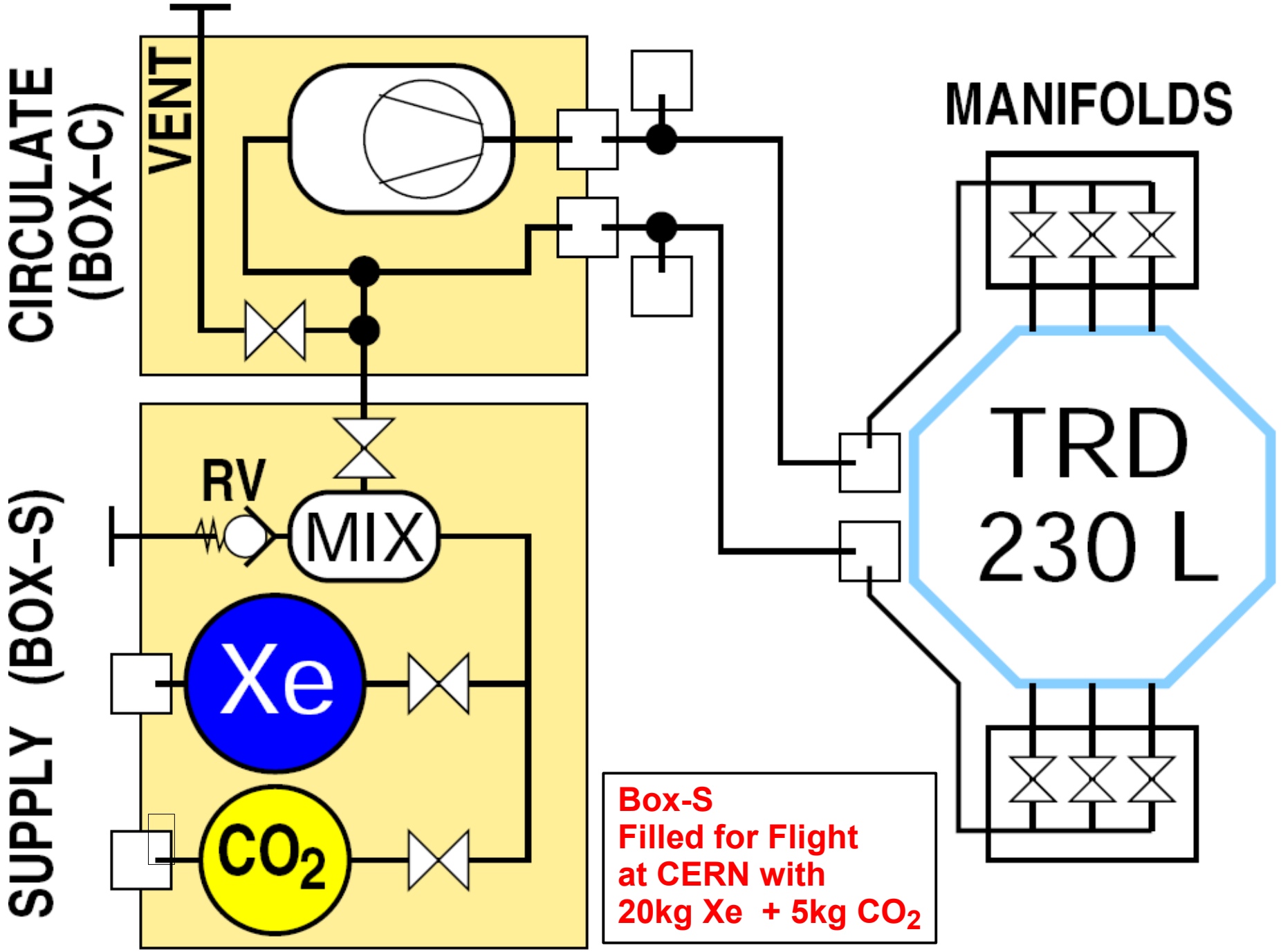
TRD Octagon CF/Honeycomb Structure

2 Layer Wall

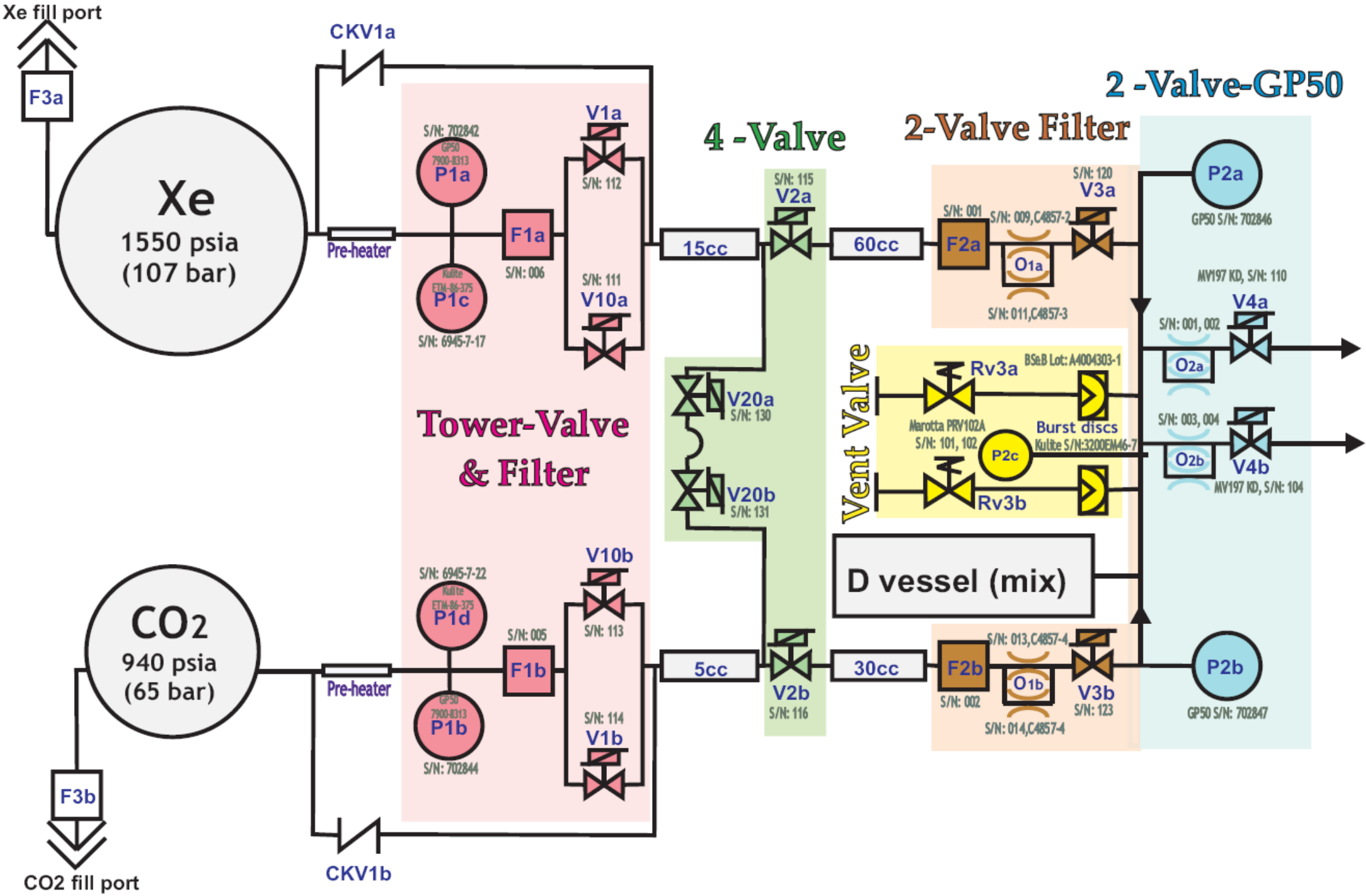


Module

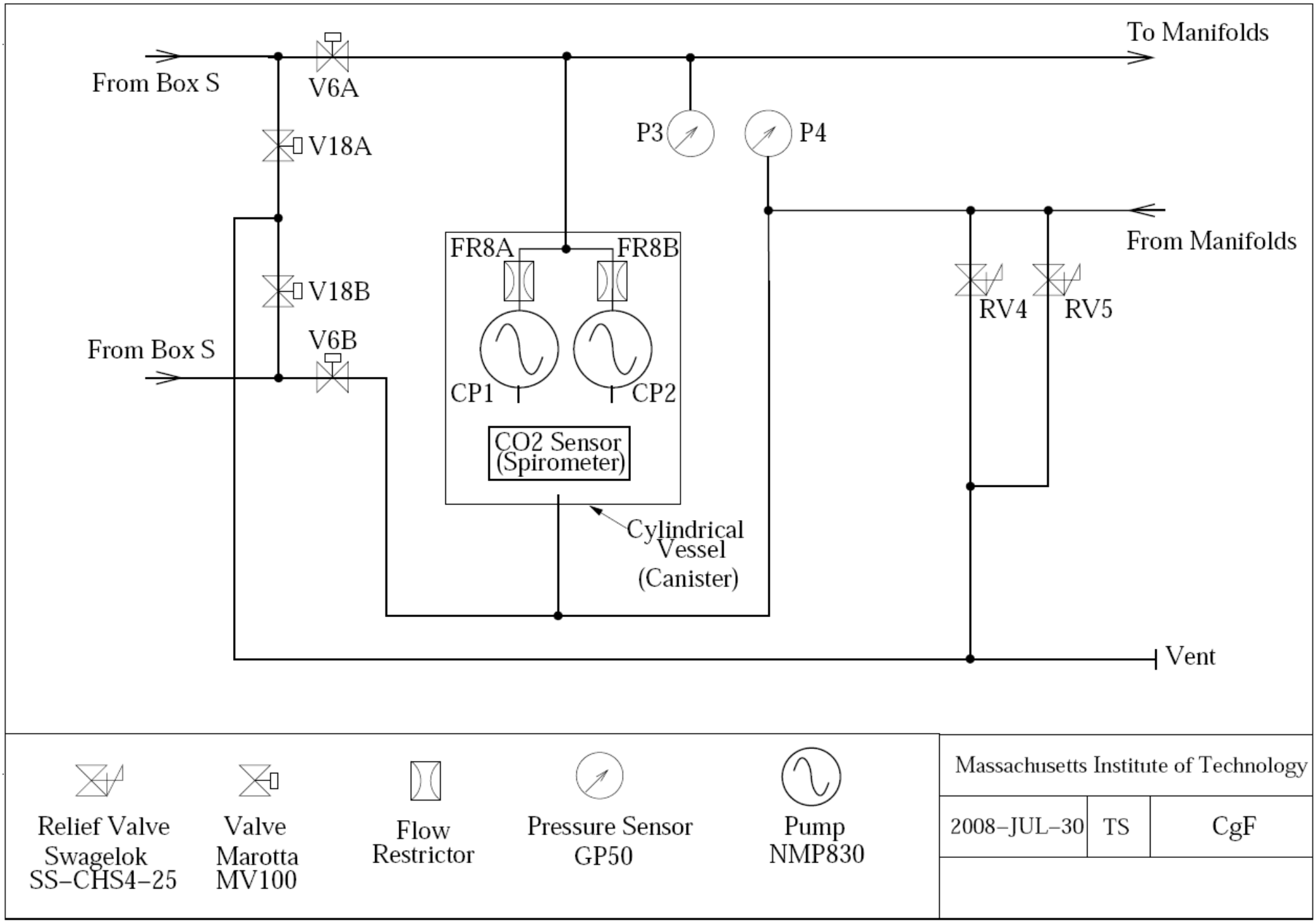
TRD-GAS Schematics



Box-S Diagram

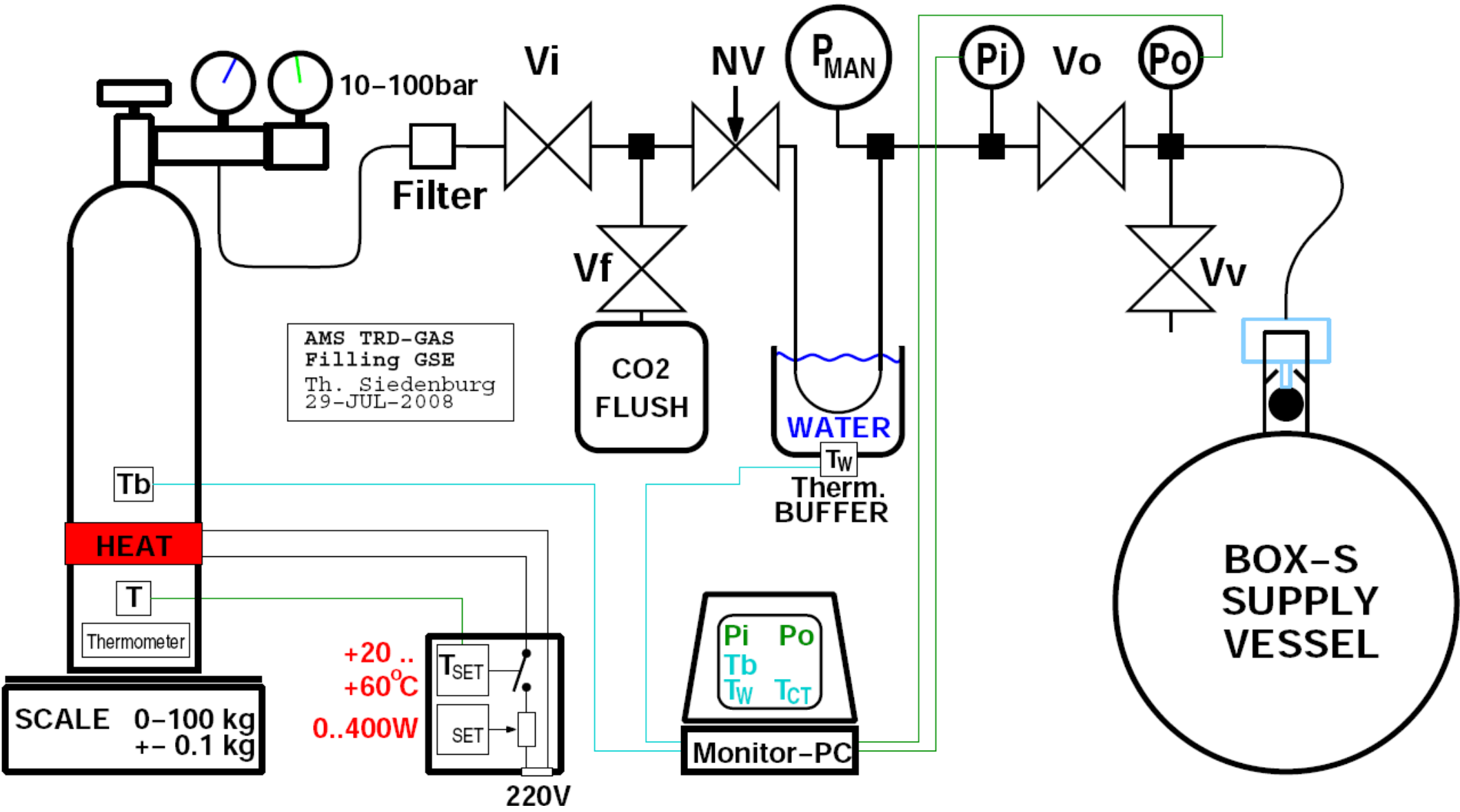


Box-C Diagram



TRD-GAS GSE System II

Supply-Vessel Filling



Tested successfully for 100% CO_2 transfer at MIT

OPTIONAL USE AT KSC ONLY

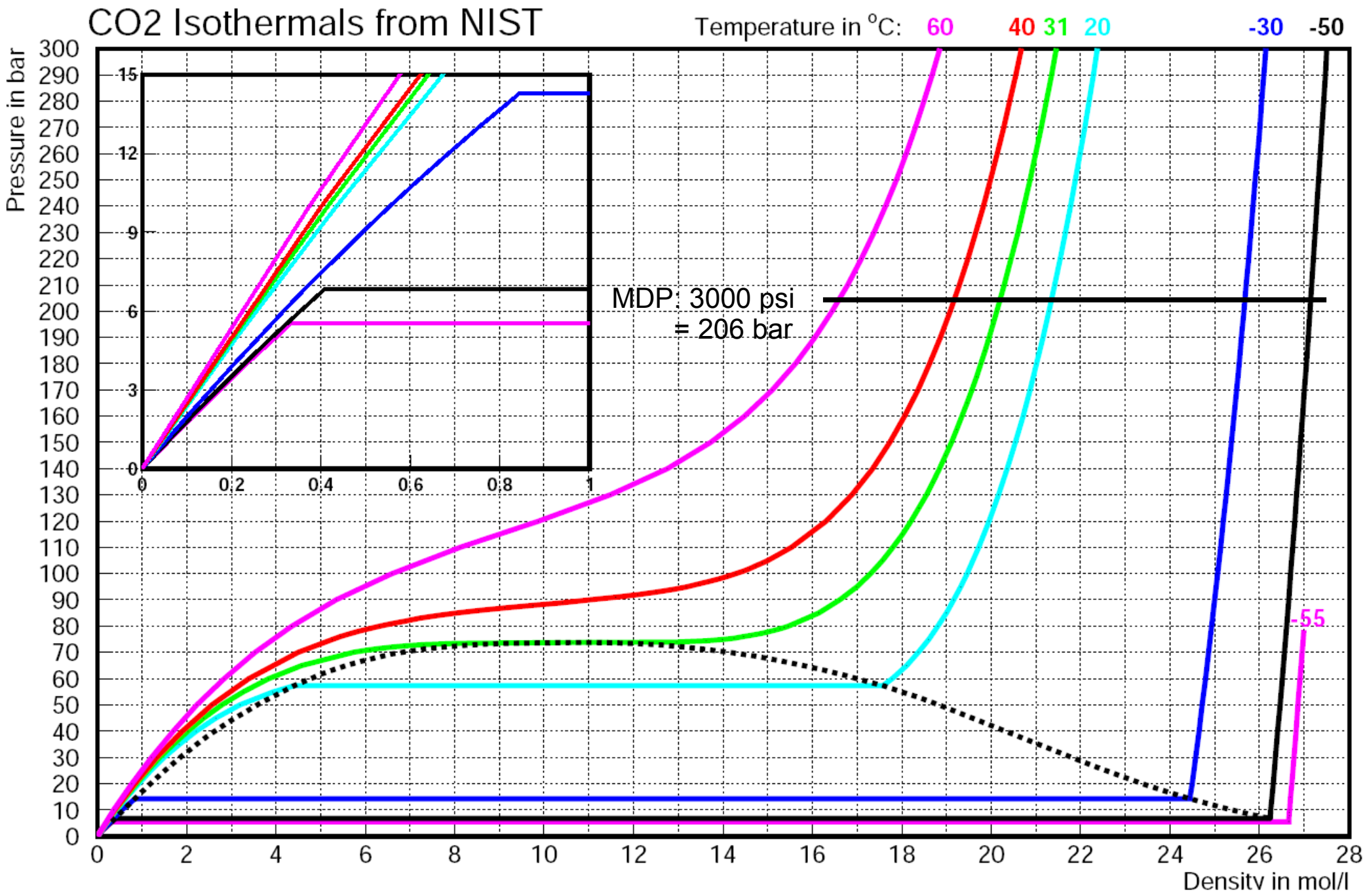
TRD-GAS GSE II Operation

- Supply Vessel Filling only as **EMERGENCY RECOVERY**

- Emergency: Pressure Loss in Box-S Supply Vessels
  detected during Pre-Launch Wait

- Operation: As part of Payload Preparation
  Always manned (by two persons)
  Manually controlled Valves
  Define Maximum Bottle Pressure before connecting
  Three manual pressure gauges on GSE
  Four PC recorded pressure gauges on GSE & TRD-GAS
  Heated bottle is caged against accidental touching
  to allow weight measurement

CO_2 NIST ISOTHERMALS



Xenon NIST ISOTHERMALS